

## **P6\_TA-PROV(2009)0278**

### **Energy performance of buildings (recast) \*\*\*I**

**European Parliament legislative resolution of 23 April 2009 on the proposal for a directive of the European Parliament and of the Council on the energy performance of buildings (recast) (COM(2008)0780 – C6-0413/2008 – 2008/0223(COD))**

**(Codecision procedure – recast)**

*The European Parliament,*

- having regard to the Commission proposal to the European Parliament and the Council (COM(2008)0780),
  - having regard to Article 251(2) and Article 175(1) of the EC Treaty, pursuant to which the Commission submitted the proposal to Parliament (C6-0413/2008),
  - having regard to the Interinstitutional Agreement of 28 November 2001 on a more structured use of the recasting technique for legal acts<sup>1</sup>,
  - having regard to the letter of 3 February 2009 from the Committee on Legal Affairs to the Committee on Industry, Research and Energy in accordance with Rule 80a(3) of its Rules of Procedure,
  - having regard to Rules 80a and 51 of its Rules of Procedure,
  - having regard to the report of the Committee on Industry, Research and Energy and the opinion of the Committee on Legal Affairs (A6-0254/2009),
- A. whereas, according to the Consultative Working Party of the Legal Services of the European Parliament, the Council and the Commission, the proposal in question does not include any substantive amendments other than those identified as such in the proposal and whereas, as regards the codification of the unchanged provisions of the earlier acts together with those amendments, the proposal contains a straightforward codification of the existing texts, without any change in their substance,
1. Approves the Commission proposal as adapted to the recommendations of the Consultative Working Party of the legal services of the European Parliament, the Council and the Commission and as amended below;
  2. Calls on the Commission to refer the matter to Parliament again if it intends to amend the proposal substantially or replace it with another text;
  3. Instructs its President to forward its position to the Council and Commission.

#### **Amendment 1**

<sup>1</sup> OJ C 77, 28.3.2002, p. 1.

**Proposal for a directive**  
**Recital 3**

*Text proposed by the Commission*

(3) **Reduction** of energy consumption in the buildings sector constitutes an important part of the measures needed to reduce greenhouse gas emissions **and** comply with the Kyoto Protocol to the United Nations Framework Convention on Climate Change, **and with further European and international commitments to reduce greenhouse gas emissions beyond 2012**. Reduced energy consumption also has an important part to play in promoting security of energy supply, technological development and providing opportunities for employment and regional development, especially in rural areas.

*Amendment*

(3) **As buildings account for 40% of total energy consumption in the EU, reduction of energy consumption and the use of energy from renewable sources** in the buildings sector constitutes an important part of the measures needed to reduce **the EU's energy dependency and** greenhouse gas emissions. **Together with an increased use of energy from renewable sources, the measures taken to reduce the energy consumption in the EU will allow the EU to** comply with the Kyoto Protocol to the United Nations Framework Convention on Climate Change (**UNFCCC**) **and its long term commitment to maintain the global temperature rise below 2°C, as well as its commitment to reduce the overall greenhouse gas emissions by at least 20% below 1990 levels by 2020, and by 30% in the case of an international agreement**. Reduced energy consumption **and an increased use of energy from renewable sources** also has an important part to play in promoting security of energy supply, technological development and providing opportunities for employment and regional development, especially in rural areas.

**Amendment 2**

**Proposal for a directive**  
**Recital 5**

*Text proposed by the Commission*

(5) The European Council of March 2007 emphasised the need to increase energy efficiency in the Community so as to achieve the objective of reducing by 20 % the Community's energy consumption by 2020 and called for a thorough and rapid implementation of the priorities established in the Communication of the Commission "Action Plan for Energy Efficiency: Realising the Potential" . This Action Plan

*Amendment*

(5) The European Council of March 2007 emphasised the need to increase energy efficiency in the Community so as to achieve the objective of reducing by 20 % the Community's energy consumption by 2020 and called for a thorough and rapid implementation of the priorities established in the Communication of the Commission "Action Plan for Energy Efficiency: Realising the Potential" . This Action Plan

identified the significant potential for cost-effective energy savings in the buildings sector. The European Parliament, in its resolution of 31 January 2008, has called for strengthening the provisions of Directive 2002/91/EC.

identified the significant potential for cost-effective energy savings in the buildings sector. The European Parliament, in its resolution of 31 January 2008, has called for strengthening the provisions of Directive 2002/91/EC, *and has called at various times, on the latest occasion in its resolution on the Second Strategic Energy Review, for the 20% energy efficiency target in 2020 to be made binding. Moreover, Decision No .../2009/EC of the European Parliament and of the Council on effort sharing, for which energy efficiency in the building sector will be crucial, sets national binding targets for CO<sub>2</sub> reduction, and Directive 2009/.../EC of the European Parliament and of the Council on the promotion of the use of energy from renewable sources calls for the promotion of energy efficiency in the context of a binding target for energy from renewable sources accounting for 20% of total EU energy consumption by 2020.*

### **Amendment 3**

#### **Proposal for a directive Recital 5 a (new)**

*Text proposed by the Commission*

*Amendment*

*(5a) The European Council of March 2007 reaffirmed the Community's commitment to the Community-wide development of energy from renewable sources by endorsing a mandatory target of a 20% share of energy from renewable sources by 2020. Directive 2009/.../EC [ on the promotion of the use of energy from renewable sources] establishes a common framework for the promotion of energy from renewable sources. It underlines the need to incorporate a factor for energy from renewable sources in meeting minimum energy performance requirements under Directive 2002/91/EC in order to speed up the setting of minimum levels for the use of energy from renewable sources in buildings.*

## Amendment 4

### Proposal for a directive Recital 9

#### *Text proposed by the Commission*

(9) The energy performance of buildings should be calculated on the basis of a methodology, ***which may be differentiated at national and regional level***, and that includes, in addition to thermal characteristics, other factors that play an increasingly important role such as heating ***and air-conditioning installations***, application of renewable energy sources, passive heating and cooling elements, shading, indoor air-quality, adequate natural light and design of the building. The methodology for calculating energy performance should not only be based on the season where heating is required, but should cover the annual energy performance of a building.

#### *Amendment*

(9) The energy performance of buildings should be calculated on the basis of a ***common*** methodology, ***with objective variables that take into account regional climatic differences***, and that includes, in addition to thermal characteristics, other factors that play an increasingly important role such as heating, ***cooling and ventilation systems, heat recovery, zone control***, application of renewable energy sources, passive heating and cooling elements, shading, indoor air-quality, adequate natural light ***measurements, insulation and lighting systems, monitoring and control systems*** and design of the building. The methodology for calculating energy performance should not only be based on the season where heating is required, but should cover the annual energy performance of a building. ***The methodology should take into account existing European standards.***

## Amendment 5

### Proposal for a directive Recital 12

#### *Text proposed by the Commission*

(12) The Commission should lay down a ***comparative*** methodology for calculating cost-optimal levels of minimum energy performance requirements. Member States should use this ***comparative*** methodology to ***compare the results with*** the minimum energy performance requirements ***which they have adopted***. The results of this comparison and the data used to reach these results should be regularly reported to the Commission. These reports should enable the Commission to assess the progress of Member States in reaching cost-optimal levels of minimum energy

#### *Amendment*

(12) The Commission should lay down a ***common*** methodology for calculating cost-optimal levels of minimum energy performance requirements. ***This methodology should be consistent with that used in Community legislation applicable to performance requirements for the products, components and technical building systems which comprise the building.*** Member States should use this ***common*** methodology to ***adopt*** the minimum energy performance requirements. The results of this ***calculation*** and the data used to reach

performance requirements and to report on it. *After a transitional period* Member States should *use* this *comparative* methodology when they review their minimum energy performance requirements.

these results should be regularly reported to the Commission. These reports should enable the Commission to assess the progress of Member States in reaching cost-optimal levels of minimum energy performance requirements and to report on it. Member States should *apply* this methodology when they review *and set* their minimum energy performance requirements.

## Amendment 6

### Proposal for a directive Recital 13

*Text proposed by the Commission*

(13) Buildings have *an* impact on long-term energy consumption *and* new buildings should therefore meet minimum energy performance requirements adapted to the local climate. As the application of alternative energy supply systems is generally not explored to its full potential, *the technical, environmental and economic feasibility* of alternative energy supply systems should be considered, regardless of *the size of the building*.

*Amendment*

(13) Buildings have *a major* impact on long-term energy consumption. *Given the long renovation cycle for existing buildings, new, and existing buildings that are subject to major renovation*, should therefore meet minimum energy performance requirements adapted to the local climate. As the application of alternative energy supply systems is generally not explored to its full potential, alternative energy supply systems should be considered *for new and existing buildings*, regardless of *their* size, *pursuant to the principle of first ensuring that energy needs for heating and cooling are reduced to a minimum cost-optimal level*.

## Amendment 7

### Proposal for a directive Recital 14

*Text proposed by the Commission*

(14) Major renovations of existing buildings, regardless of their size, provide an opportunity to take cost-effective measures to enhance energy performance. *For reasons of cost-efficiency, it should be possible to limit the minimum energy*

*Amendment*

(14) Major renovations of existing buildings, regardless of their size provide an opportunity to take cost-effective measures to enhance energy performance *of the whole building. Setting requirements for cost-effective measures*

*performance requirements to the renovated parts that are most relevant for the energy performance of the building.*

*will ensure that no barriers are created which might discourage major renovations from being undertaken.*

## **Amendment 8**

### **Proposal for a directive Recital 14 a (new)**

*Text proposed by the Commission*

*Amendment*

*(14a) Studies show that the construction sector suffers from inefficiency, which leads to end-user costs that are significantly higher than the optimal costs. Calculations show that the costs for construction could be reduced by as much as 30-35 % through reducing waste in most construction processes and for most products. The inefficiency in the construction sector poses a major threat to the aim and purpose of this Directive, since the unjustified high costs for construction and renovation reduces the cost-effectiveness and thereby the energy-effectiveness of the sector. In order to guarantee the proper functioning of this Directive, the Commission should evaluate the functioning of the construction market and report its conclusions and suggestions to the European Parliament and the Council. Member States should strive to ensure transparent pricing in the field of construction and renovation, and in addition take appropriate measures to remove barriers of entry to the market, and to relevant facilities and infrastructure, for new entrants, especially for SMEs.*

## **Amendment 9**

### **Proposal for a directive Recital 14 b (new)**

*Text proposed by the Commission*

*Amendment*

*(14b) In order to improve the energy*

*efficiency of domestic appliances and of heating and cooling, information technology should be developed and brought into use, the objective being 'intelligent buildings'.*

## Amendment 10

### Proposal for a directive Recital 15

#### *Text proposed by the Commission*

(15) Measures are needed to increase the number of buildings which not only fulfil current minimum energy performance requirements, but ***are more energy efficient***. For this purpose Member States should draw up national plans for increasing the number of buildings ***of which both carbon dioxide emissions and primary energy consumption are low or equal to zero*** and regularly report them to the Commission.

#### *Amendment*

(15) Measures are needed to increase the number of buildings which not only fulfil current minimum energy performance requirements, but ***ensure at least a cost-optimal level of energy performance***. For this purpose Member States should draw up national plans for increasing the number of ***net zero energy*** buildings and regularly report them to the Commission.

## Amendment 11

### Proposal for a directive Recital 16 a (new)

#### *Text proposed by the Commission*

#### *Amendment*

***(16a) Member States should be encouraged to take measures additional to those laid down in this Directive to promote the increased energy efficiency of buildings. Such measures may include financial and fiscal incentives to businesses, homeowners and tenants including reduced rates of VAT for renovation services.***

## Amendment 12

**Proposal for a directive**  
**Recital 16 b (new)**

*Text proposed by the Commission*

*Amendment*

***(16b) Member States should avoid distortive energy price regulation for consumers which does not provide incentives to make energy savings.***

**Amendment 13**

**Proposal for a directive**  
**Recital 17**

*Text proposed by the Commission*

*Amendment*

(17) The prospective buyer and tenant of building or parts thereof should be given correct information about the energy performance of the building and practical advice about improving it, through the energy performance certificate. The certificate should also provide information about the actual impact of heating and cooling on the energy needs of the building, on its primary energy consumption and on carbon dioxide emissions.

(17) The prospective buyer and tenant of building or parts thereof should be given correct information about the energy performance of the building and practical advice about improving it, through the energy performance certificate. ***Owners and tenants of commercial buildings should also be obliged to exchange information regarding actual energy consumption, in order to ensure that all the data is available to make informed decisions about necessary improvements.*** The certificate should also provide information about the actual impact of heating and cooling on the energy needs of the building, on its primary energy consumption and on carbon dioxide emissions. ***Building owners should have the opportunity to request certification or an updated certificate at any time, not just at the time at which buildings are rented, sold or refurbished.***

**Amendment 14**

**Proposal for a directive**  
**Recital 17 a (new)**

*Text proposed by the Commission*

*Amendment*

***(17a) Public authorities should lead by example and should implement the recommendations included in the energy***

*performance certificate within its validity period. Member States should include within their national plans measures to support public authorities to become early adopters of energy efficiency improvements and to implement the recommendations included in the energy performance certificate within its validity period. In developing the national plans, Member States should consult the representatives of local and regional authorities.*

## Amendment 15

### Proposal for a directive Recital 17 b (new)

*Text proposed by the Commission*

*Amendment*

*(17b) In accordance with the requirements on the installation of smart meters laid down in Directive 2006/32/EC, owners and tenants should be supplied with accurate real-time information on energy consumption in the buildings that they occupy.*

## Amendment 16

### Proposal for a directive Recital 18

*Text proposed by the Commission*

*Amendment*

(18) Buildings occupied by public authorities and buildings frequently visited by the public ***provide an opportunity to*** set an example by showing environmental and energy considerations being taken into account and therefore those buildings should be subject to energy certification on a regular basis. The dissemination to the public of information on energy performance should be enhanced by clearly displaying these energy certificates.

(18) Buildings occupied by public authorities and buildings frequently visited by the public ***should*** set an example by showing environmental and energy considerations being taken into account and therefore those buildings should be subject to energy certification on a regular basis. The dissemination to the public of information on energy performance should be enhanced by clearly displaying these energy certificates. ***If Member States opt to include energy usage as part of energy certification requirements, a site-based approach may be taken whereby a***

*collection of buildings in the same vicinity and occupied by the same organisation share energy meters.*

## Amendment 17

### Proposal for a directive Recital 18 a (new)

*Text proposed by the Commission*

*Amendment*

*(18a) Ensuring mutual recognition of energy performance certificates issued by other Member States is likely to be important for the development of a cross-border market for financial and other services supporting energy efficiency. To facilitate this, the Commission should establish common minimum standards for the content and presentation of certificates, and for the accreditation of experts. Any energy performance certificate should be available both in the language of the owner and of the tenant, in order to make recommendations easily understood.*

## Amendment 18

### Proposal for a directive Recital 19

*Text proposed by the Commission*

*Amendment*

(19) Recent years have seen a rise in the number of air-conditioning systems in European countries. This creates considerable problems at peak load times, increasing the cost of electricity and disrupting the energy balance in *those countries*.

(19) Recent years have seen a rise in the number of air-conditioning systems in European countries. This creates considerable problems at peak load times, increasing the cost of electricity and disrupting the energy balance in *all Member States. Priority should be given to strategies which enhance the thermic performance of buildings during the summer period. To that end, there should be further development of passive cooling techniques, primarily those that improve indoor climatic conditions and the micro-climate around buildings.*

## Amendment 19

### Proposal for a directive Recital 20

*Text proposed by the Commission*

(20) Regular inspection of heating and air-conditioning systems by qualified personnel contributes to maintaining their correct adjustment in accordance with the product specification and in that way ensures optimal performance from an environmental, safety and energy point of view. An independent assessment of the entire heating and air-conditioning system should occur at regular intervals during the life-cycle thereof, especially before their replacement or retrofitting.

*Amendment*

(20) Regular inspection of heating and air-conditioning systems by qualified personnel contributes to maintaining their correct adjustment in accordance with the product specification and in that way ensures optimal performance from an environmental, safety and energy point of view. An independent assessment of the entire heating and air-conditioning system should occur at regular intervals during the life-cycle thereof, especially before their replacement or retrofitting. ***To minimise the administrative burden on building owners and tenants, Member States should ensure that any certification for energy performance includes an inspection of heating and air conditioning systems; and that, as far as possible, inspections of heating and air conditioning systems are carried out at the same time.***

## Amendment 20

### Proposal for a directive Recital 21 a (new)

*Text proposed by the Commission*

*Amendment*

***(21a) Local and regional authorities are critical for the successful implementation of this Directive. Their representatives should be consulted on every aspect of its implementation at national or regional level. Local planners and building inspectors should receive adequate guidance and resources to carry out the necessary tasks.***

## Amendment 21

**Proposal for a directive**  
**Recital 21 b (new)**

*Text proposed by the Commission*

*Amendment*

***(21b) In so far as the access or pursuit of the profession of installer is a regulated profession, the preconditions for the recognition of professional qualifications are laid down in Directive 2005/36/EC on the recognition of professional qualifications. This Directive therefore applies without prejudice to Directive 2005/36/EC. While Directive 2005/36/EC lays down requirements for the mutual recognition of professional qualifications, including for architects, there is a further need to ensure that architects and planners properly consider high-efficiency technologies in their plans and designs. Member States should therefore provide clear guidance. This should be done without prejudice to the provisions of Directive 2005/36/EC and in particular Articles 46 and 49 thereof.***

**Amendment 22**

**Proposal for a directive**  
**Recital 23**

*Text proposed by the Commission*

*Amendment*

(23) Power should in particular be conferred on the Commission to adapt certain parts of the general framework set out in Annex I to technical progress, to establish a ***methodologies*** for calculating cost-optimal levels of minimum energy performance requirements and to establish ***common principles for defining buildings of which both carbon dioxide emissions and primary energy consumption are low or equal to zero***. Since those measures are of general scope and are designed to amend non-essential elements of this Directive, they must be adopted in accordance with the regulatory procedure with scrutiny provided for in Article 5a of Decision 1999/468/EC.

(23) Power should in particular be conferred on the Commission to adapt certain parts of the general framework set out in Annex I to technical progress, to establish a ***common methodology*** for calculating cost-optimal levels of minimum energy performance requirements and to establish ***a definition for net zero energy buildings taking into consideration normal regional weather conditions and predicted changes in such weather conditions over time***. Since those measures are of general scope and are designed to amend non-essential elements of this Directive, they must be adopted in accordance with the regulatory procedure with scrutiny provided for in Article 5a of

Decision 1999/468/EC.

*(23a) As lighting applications currently account for approximately 14 % of the energy used in the EU and as modern state of the art lighting systems can save more than 80 % of energy while maintaining lighting conditions in line with European standards, which is an underexploited contribution to enabling the European Union to achieve the EU 2020 targets, the Commission should take appropriate steps towards the adoption of a Lighting Design Directive in order to complement the measures and aims laid down in this Directive. Higher energy efficiency arising from better lighting design and the use of energy efficient light sources in line with the provisions under the Energy use of products Directive is considered to be a significant contribution to better energy performance in buildings.*

## **Amendment 24**

### **Proposal for a directive**

#### **Recital 24**

##### *Text proposed by the Commission*

(24) Since the objectives of enhancing the energy performance of buildings cannot be sufficiently achieved by the Member States due to the complexity of the buildings sector, and the inability of the national housing markets to adequately address the challenges of energy *efficiency*, and can by the reason of the scale and the effects of the action be better achieved at Community level, the Community may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty. . In accordance with the principles of proportionality, as set out in that Article, this Directive does not go beyond what is necessary in order to achieve those

##### *Amendment*

(24) Since the objectives of enhancing the energy performance of buildings cannot be sufficiently achieved by the Member States due to the complexity of the buildings sector, and the inability of the national housing markets to adequately address the challenges of energy *performance*, and can by the reason of the scale and the effects of the action be better achieved at Community level, the Community may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty. In accordance with the principles of proportionality, as set out in that Article, this Directive does not go beyond what is necessary in order to achieve those

objectives.

objectives.

## **Amendment 25**

### **Proposal for a directive Article 1 – paragraph 1**

#### *Text proposed by the Commission*

This Directive promotes the improvement of the energy performance of buildings within the Community, taking into account outdoor climatic and local conditions, as well as indoor climate requirements and *cost-effectiveness*.

#### *Amendment*

This Directive promotes the improvement of the energy performance of buildings within the Community, taking into account outdoor climatic and local conditions, as well as indoor climate requirements and *cost-optimal levels of energy performance*.

## **Amendment 26**

### **Proposal for a directive Article 1 - point a**

#### *Text proposed by the Commission*

(a) *the general framework for* a methodology of calculation of the integrated energy performance of buildings and parts thereof;

#### *Amendment*

(a) a methodology of calculation of the integrated energy performance of buildings and parts thereof, *of building components and of technical building systems*;

## **Amendment 27**

### **Proposal for a directive Article 1 – point c**

#### *Text proposed by the Commission*

(c) the application of minimum requirements on the energy performance of existing buildings *and parts thereof* that are subject to major renovation;

#### *Amendment*

(c) the application of minimum requirements on the energy performance of existing buildings that are subject to major renovation *and of the building components and technical building systems whenever they are replaced or retrofitted*;

## Amendment 28

### Proposal for a directive Article 1 - point d

*Text proposed by the Commission*

(d) national plans for increasing the number of buildings ***of which both carbon dioxide emissions and primary energy consumption are low or equal zero***;

*Amendment*

(d) national plans ***and targets*** for increasing the number of ***net zero energy*** buildings;

## Amendment 29

### Proposal for a directive Article 1 – point g a (new)

*Text proposed by the Commission*

***(ga) education, training and mutual recognition requirements between Member States for certifiers of the energy performance of buildings and for inspectors of heating and air-conditioning systems;***

*Amendment*

## Amendment 30

### Proposal for a directive Article 1 – point g b (new)

*Text proposed by the Commission*

***(gb) national plans for eliminating obstacles under building, tenancy and heritage protection laws and for creating financial incentives.***

*Amendment*

## Amendment 31

### Proposal for a directive Article 2 – point 1 a (new)

*Text proposed by the Commission*

***(1a) "new building" means a building for which the relevant authorisation for construction is obtained after the entry***

*Amendment*

*into force of this Directive;*

### **Amendment 32**

#### **Proposal for a directive Article 2 – point 1 b (new)**

*Text proposed by the Commission*

*Amendment*

***(1b) "parts of a building" means apartments or units designated for separate use in building blocks;***

### **Amendment 33**

#### **Proposal for a directive Article 2 - point 1c (new)**

*Text proposed by the Commission*

*Amendment*

***(1c) "net zero energy building" means a building where, as a result of the very high level of energy efficiency of the building, the overall annual primary energy consumption is equal to or less than the energy production from renewable energy sources on site;***

### **Amendment 34**

#### **Proposal for a directive Article 2 – point 2**

*Text proposed by the Commission*

*Amendment*

(2) "technical building system" means technical equipment for heating, cooling, ventilation, hot water, lighting and electricity production or for a combination of those;

(2) "technical building system" means technical equipment for heating, cooling, ventilation, hot water, lighting and electricity production, ***measurement, monitoring and control systems***, or for a combination of those;

### **Amendment 35**

#### **Proposal for a directive Article 2 - point 3**

*Text proposed by the Commission*

*Amendment*

(3) "energy performance of a building"

(3) "energy performance of a building"

means the calculated or measured amount of energy needed to meet the energy demand associated with a typical use of the building, which includes inter alia energy used for heating, hot water, cooling, ventilation and lighting;

means the calculated or measured amount of energy needed to meet the **primary** energy demand associated with a typical use of the building, **expressed in kWh/m<sup>2</sup> per year, and** which includes inter alia energy used for heating, hot water, cooling, ventilation, **and built-in lighting, taking into account passive solar gains, sun shading** and natural lighting;

## Amendment 36

### Proposal for a directive Article 2 – point 4

*Text proposed by the Commission*

(4) "primary energy": means renewable and non-renewable **energy** which has not undergone any conversion or transformation process;

*Amendment*

(4) "primary energy": means **energy from** renewable and non-renewable **sources** which has not undergone any conversion or transformation process;

## Amendment 37

### Proposal for a directive Article 2 – point 4 a (new)

*Text proposed by the Commission*

*Amendment*

**(4a) "energy from renewable sources" means energy from renewable non-fossil sources: wind, solar, geothermal, aerothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases;**

## Amendment 38

### Proposal for a directive Article 2 - point 5

*Text proposed by the Commission*

(5) "building envelope" means elements of a building which separate its interior from the outdoor environment, **including the windows, walls, foundation, basement slab, ceiling, roof, and insulation;**

*Amendment*

(5) "building envelope" means **the integrated** elements of a building which separate its interior from the outdoor environment;

## Amendment 39

### Proposal for a directive Article 2 - point 5a (new)

*Text proposed by the Commission*

*Amendment*

***(5a) "building component" means an individual part of a building which influences the energy performance of the building and is not covered by the technical building system, including windows, shading, exterior doors, walls, foundation, basement slab, ceiling, roof, and insulation systems;***

## Amendment 40

### Proposal for a directive Article 2 - point 6

*Text proposed by the Commission*

*Amendment*

(6) "major renovation": means the renovation of a building where

(a) the total cost of the renovation related to the building envelope or the technical building systems is higher than **25** % of the value of the building, excluding the value of the land upon which the building is situated, or

(b) more than 25 % of the surface of the building envelope undergoes renovation;

(6) "major renovation": means the renovation of a building where

(a) the total cost of the renovation related to the building envelope or the technical building systems is higher than **20** % of the value of the building, ***in which case the value shall be based on current construction costs in the Member State concerned***, excluding the value of the land upon which the building is situated, or

(b) more than 25 % of the surface of the building envelope, ***which has a direct effect on the energy performance of the building***, undergoes renovation;

## Amendment 41

### Proposal for a directive Article 2 - point 10

*Text proposed by the Commission*

*Amendment*

(10) "cost-optimal level" means the ***lowest*** level ***of costs during*** the life-cycle of a building, which are determined taking into account investment ***costs, maintenance*** and operating costs (including energy

(10) "cost-optimal level" means the level ***where the cost-benefit analysis calculated over*** the life-cycle of a building ***is positive***, taking into account ***at least the net present value of*** investment and operating costs

costs), earnings from energy produced, **where applicable**, and disposal costs, where applicable;

(including energy costs), ***maintenance***, earnings from energy produced and disposal costs, where applicable.

#### **Amendment 42**

##### **Proposal for a directive Article 2 – point 14**

*Text proposed by the Commission*

(14) "heat pump" means a device or installation that ***extracts*** heat ***at low temperature*** from air, water or ***earth and supplies the heat to the building***.

*Amendment*

(14) "heat pump" means ***a machine***, a device or installation that ***transfers*** heat from ***natural surroundings such as*** air, water or ***ground to buildings or industrial applications by reversing the natural flow of heat such that it flows from a lower to a higher temperature. The amount of ambient energy captured by heat pumps to be considered renewable energy for the purposes of this Directive shall be that established under Directive 2009/.../EC [on the promotion of the use of energy from renewable sources];***

#### **Amendment 43**

##### **Proposal for a directive Article 2 – point 14 a (new)**

*Text proposed by the Commission*

*Amendment*

***(14a) 'energy poverty' means the situation where a household has to spend more than 10% of its revenue on energy bills in order to heat its home to an acceptable standard based on the levels recommended by the World Health Organisation;***

#### **Amendment 44**

##### **Proposal for a directive Article 2 – point 14 b (new)**

*Text proposed by the Commission*

*Amendment*

***(14b) "lighting system" means the combination of components required to***

*provide a certain light level;*

#### **Amendment 45**

##### **Proposal for a directive Article 2 – point 14 c (new)**

*Text proposed by the Commission*

*Amendment*

*(14c) "district heating or cooling" means the distribution of thermal energy in the form of steam, hot water or chilled liquids, from a central source of production through a network to multiple buildings, for the use of space or process heating or cooling or for water heating;*

#### **Amendment 46**

##### **Proposal for a directive Article 2 – point 14 d (new)**

*Text proposed by the Commission*

*Amendment*

*(14d) "lighting design" means a scheme or drawing detailing the configuration and layout of luminaires including related control equipment.*

#### **Amendment 47**

##### **Proposal for a directive Article 3**

*Text proposed by the Commission*

*Amendment*

*Member States shall apply a methodology of calculation of the energy performance of buildings in accordance with the general framework set out in Annex I.*

*1. The Commission shall, after consulting the relevant stakeholders and in particular representatives from local, regional and national authorities, establish by 31 March 2010 a common methodology of calculation of the energy performance of buildings, in accordance with the general framework set out in Annex I.*

*Those measures designed to amend non-essential elements of this Directive by supplementing it shall be adopted in*

This methodology *shall be adopted at national or regional level*.

*accordance with the regulatory procedure with scrutiny referred to in Article 21(2).*

*2. Member States shall implement this common methodology.*

## Amendment 48

### Proposal for a directive Article 3 – paragraph 2 a (new)

*Text proposed by the Commission*

*Amendment*

*2a. The energy performance of buildings shall be expressed in a transparent manner and shall include an indicator for primary energy demand.*

## Amendment 100

### Proposal for a directive Article 4 - paragraph 1

*Text proposed by the Commission*

*Amendment*

1. Member States shall take the necessary measures to ensure that minimum energy performance requirements for buildings are set *with a view to achieving* cost-optimal levels and are calculated in accordance with the methodology referred to in Article 3.

1. Member States shall take the necessary measures to ensure that minimum energy performance requirements for buildings *and for building components and technical building systems and parts thereof* are set *to achieve at least* cost-optimal levels and are calculated in accordance with the *common* methodology referred to in Article 3.

When setting requirements, Member States may differentiate between new and existing buildings and between different categories of buildings.

When setting requirements, Member States *shall consult public authorities and other relevant stakeholders and* may differentiate between new and existing buildings and between different categories of buildings.

These requirements shall take account of general indoor climate conditions, in order to avoid possible negative effects such as inadequate ventilation, as well as local conditions and the designated function and the age of the building.

These requirements *shall be consistent with other applicable Community legislation and* shall take account of general indoor climate *and indoor and outdoor lighting* conditions, in order to avoid possible negative effects such as inadequate ventilation *and inadequate natural lighting*, as well as local conditions and the designated function and

These requirements shall be reviewed at regular intervals which shall not be longer than **five** years and, **if necessary**, shall be updated in order to reflect technical progress in the building sector.

the age of the building.

These requirements shall be reviewed at regular intervals which shall not be longer than **four** years and shall be updated in order to reflect technical progress in the building sector.

***The provisions of this Article shall not prevent Member States from supporting the construction of new buildings, major renovations, the upgrading of components and technical systems which go beyond the minimum requirements established under this Directive.***

## Amendment 50

### Proposal for a directive Article 4 - paragraph 2

#### *Text proposed by the Commission*

2. Member States may decide not to set or apply the requirements referred to in paragraph 1 for the following categories of buildings:

(a) buildings officially protected as part of a designated environment or because of their special architectural or historic merit, **where** compliance with **the** minimum energy performance **requirements** would unacceptably alter their character or appearance;

(b) buildings used as places of worship and for religious activities;

(c) temporary buildings with a planned time of use of **two years or less**, industrial sites, workshops and non-residential agricultural buildings with low energy demand and non-residential agricultural buildings which are in use by a sector covered by a national sectoral agreement on energy performance;

***(d) residential buildings which are intended to be used less than four months of the year;***

(e) stand-alone buildings with a total useful floor area of less than 50 m<sup>2</sup>.

#### *Amendment*

2. Member States may decide not to set or apply the requirements referred to in paragraph 1 for the following categories of buildings:

(a) buildings officially protected as part of a designated environment or because of their special architectural or historic merit, **in so far as** compliance with **a specific** minimum energy performance **requirement** would unacceptably alter their character or appearance;

(b) buildings used as places of worship and for religious activities;

(c) temporary buildings with a planned time of use of **less than 18 months**, industrial sites, workshops and non-residential agricultural buildings with low energy demand and non-residential agricultural buildings which are in use by a sector covered by a national sectoral agreement on energy performance;

(e) stand-alone buildings with a total useful floor area of less than 50 m<sup>2</sup>.

## Amendment 51

### Proposal for a directive Article 4 – paragraph 3

*Text proposed by the Commission*

3. As from 30 June **2014** Member States shall **not provide** incentives for the construction or renovation of buildings or parts thereof which **do not** comply with minimum energy performance requirements achieving the results of the calculation referred to in Article 5(2).

*Amendment*

3. As from 30 June **2012** Member States shall **only provide** incentives for the construction or **major** renovation of buildings or parts thereof, **including building components, the results of which** comply **at least** with minimum energy performance requirements achieving the results of the calculation referred to in Article 5(2).

## Amendment 52

### Proposal for a directive Article 4 – paragraph 4

*Text proposed by the Commission*

4. **As from 30 June 2017, where** Member States review their minimum energy performance requirements set in accordance with paragraph 1 of this Article **they** shall ensure that these requirements achieve the results of the calculation referred to in Article 5(2).

*Amendment*

4. Member States **shall** review their minimum energy performance requirements set in accordance with paragraph 1 of this Article **and** shall ensure that these requirements achieve **at least** the results of the calculation referred to in Article 5(2) **no later than 30 June 2015**,

## Amendment 53

### Proposal for a directive Article 4 – paragraph 4 a (new)

*Text proposed by the Commission*

*Amendment*

**4a. Member States shall provide subsidies and technical advice for historic buildings or centres to undertake specific programmes for adaptation to energy efficiency.**

## Amendment 54

**Proposal for a directive**  
**Article 4 – paragraph 4 b (new)**

*Text proposed by the Commission*

*Amendment*

***4b. Systems for the production of energy and insulation measures located in historic centres shall be subject to visual impact assessments.***

**Amendment 55**

**Proposal for a directive**  
**Article 5**

*Text proposed by the Commission*

*Amendment*

1. The Commission shall establish by 31 ***December*** 2010 a ***comparative*** methodology for calculating cost-optimal levels of minimum energy performance requirements for buildings or parts thereof. ***The comparative*** methodology shall differentiate between new and existing buildings and between different categories of buildings.

1. The Commission shall, ***after consulting the relevant stakeholders and in particular representatives from local, regional and national authorities and on the basis of the principles set out in Annex IIIa***, establish by 31 ***March*** 2010 a ***common*** methodology for calculating cost-optimal levels of minimum energy performance requirements for buildings or parts thereof. ***This common methodology may refer to relevant European standards and*** shall:

- differentiate between new and existing buildings and between different categories of buildings,

- ***reflect the different climatic conditions in different Member States and the likely change in these conditions over the lifetime of the building concerned, and***

- ***set out common assumptions or calculation methods for energy costs.***

***The Commission shall review and, if necessary, update the common methodology every five years.***

Those measures designed to amend non-essential elements of this Directive by supplementing it shall be adopted in accordance with the procedure referred to in *Article 19(2)*.

Those measures designed to amend non-essential elements of this Directive by supplementing it shall be adopted in accordance with the *regulatory procedure with scrutiny* referred to in *Article 21(2)*.

2. Member States shall calculate cost-optimal levels of minimum energy

2. Member States shall calculate cost-optimal levels of minimum energy

performance requirements using the *comparative* methodology established in accordance with paragraph 1 and relevant parameters, such as climatic conditions, **and compare the results of this calculation to the minimum energy performance requirements which they have laid down.**

They shall report to the Commission all input data and assumptions used for these calculations and all calculation results. The report *may* be included in the Energy Efficiency Action Plans referred to in Article 14(2) of Directive 2006/32/EC. Member States shall submit to the Commission those reports every three years. The first report shall be submitted by 30 June 2011 at the latest.

3. The Commission shall publish a report on the progress of the Member States in **reaching cost-optimal levels of minimum energy performance requirements.**

performance requirements using the *common* methodology established in accordance with paragraph 1 and relevant parameters, such as climatic conditions.

They shall report to the Commission all input data and assumptions used for these calculations and all calculation results. The report **shall** be included in the Energy Efficiency Action Plans referred to in Article 14(2) of Directive 2006/32/EC. Member States shall submit to the Commission those reports every three years. The first report shall be submitted by 30 June 2011 at the latest.

3. The Commission shall publish a report on the progress of the Member States in **implementing this Article.**

## Amendments 105 and 116

### Proposal for a directive Article 6

#### *Text proposed by the Commission*

1. Member States shall take the necessary measures to ensure that new buildings meet the minimum energy performance requirements set in accordance with Article 4.

For new buildings, Member States shall **ensure that, before construction starts, the technical, environmental and economic feasibility of the following alternative systems is considered and taken into account:**

- (a) decentralised energy supply systems based on **renewable** energy;
- (b) cogeneration;
- (c) district or block heating or cooling,

#### *Amendment*

1. Member States shall take the necessary measures to ensure that new buildings meet the minimum energy performance requirements set in accordance with Article 4 **and the provisions set out in Article 9.**

For new buildings, Member States shall **promote the use of high-efficiency alternative systems. These alternative systems may include but are not limited to:**

- (a) decentralised energy supply systems based on energy **from renewable sources**;
- (b) cogeneration;
- (c) district or block heating or cooling, if available, **particularly based**

if available;

(d) heat pumps.

**2. Member States shall ensure that the analysis of alternative systems referred to in paragraph 1 is documented in a transparent manner in the application for the building permit or for the final approval of construction works of the building.**

## Amendments 106, 117 and 57

### Proposal for a directive Article 7

#### *Text proposed by the Commission*

Member States shall take the necessary measures to ensure that when buildings undergo major renovation, their energy performance is upgraded in order to meet minimum energy performance requirements in so far as this is technically, functionally and economically feasible. Member States shall determine these minimum energy performance requirements in accordance with Article 4. The requirements **may** be set **either** for the renovated building as a whole or for the renovated systems **or** components **when these are part of a renovation to be carried out within a limited time period, with the objective of improving the overall energy performance of the building or parts thereof.**

***entirely or partially on energy from renewable sources;***

(d) heat pumps.

***(da) ICT equipment for monitoring and control purposes***

***deleted***

#### *Amendment*

Member States shall take the necessary measures to ensure that when buildings undergo major renovation ***or building components and technical building systems or parts thereof are retrofitted or replaced***, their energy performance is upgraded in order to meet ***at least*** minimum energy performance requirements in so far as this is technically, functionally and economically feasible. Member States shall determine these minimum energy performance requirements in accordance with Article 4 ***and taking into account the provisions set out in Article 9.*** The requirements ***shall*** be set for ***both*** the renovated systems ***and building*** components ***whenever they are retrofitted or replaced, and for the renovated building as a whole in the case of a major renovation.***

***Member States shall encourage, in relation to buildings undergoing major renovation, the following high-efficiency alternative systems being considered and taken into account:***

***(a) decentralised energy supply systems based on energy from renewable sources;***

***(b) cogeneration;***

*(c) district or block heating or cooling, if available, particularly that based entirely or partially on energy from renewable sources;*

*(d) heat pumps;*

*(da) ICT equipment for monitoring and control purposes.*

## Amendment 58

### Proposal for a directive Article 8

*Text proposed by the Commission*

Technical building systems

1. Member States shall set minimum energy performance requirements in respect of technical building systems which are installed in buildings. Requirements shall be set for new, replacement and retrofit of technical building systems and parts thereof.

The requirements shall in particular cover the following components:

- (a) boilers or other heat generators of heating systems;
- (b) water heaters in hot water systems;
- (c) central air conditioning unit or cold generator in air-conditioning systems.

2. The minimum energy performance requirements set in accordance with

*Amendment*

Technical building systems ***and building components***

1. Member States shall set minimum energy performance requirements in respect ***of building components and*** of technical building systems which are installed ***and brought into operation*** in buildings ***and which are not covered by Directive 2009/.../EC [establishing a framework for the setting of eco-design requirements for energy-related products] and its implementing measures.***

Requirements shall be set for new, replacement and retrofit of ***operating equipment, technical building systems and building components*** and parts thereof ***and shall be applied in so far as they are technically and functionally feasible.***

The requirements shall in particular cover the following components:

- (a) boilers, other heat generators ***or heat exchangers*** of heating systems, ***including district or block heating and cooling;***
- (b) water heaters in hot water systems;
- (c) central air conditioning unit or cold generator in air-conditioning systems;

***(ca) installed lighting;***

***(cb) building components as defined in Article 2(5a).***

2. The minimum energy performance requirements set in accordance with

paragraph 1 shall be consistent with the legislation applicable to the product(s) which compose the system and be based on proper installation of the product(s) and appropriate adjustment and control of the technical building system. ***In particular***, those requirements shall ensure that a proper hydraulic balance of hydraulic wet heating systems is achieved and that the appropriate size and type of the product(s) have been used for the installation having regard to the intended use of the technical building system.

paragraph 1 shall be consistent with ***any*** legislation applicable to the product(s) which compose the systems ***and building components*** and be based on proper installation of the product(s) and appropriate adjustment and control of the technical building system. ***In the case of technical building systems***, those requirements shall ensure ***that they are properly adjusted when brought into operation***, that a proper hydraulic balance of hydraulic wet heating systems is achieved and that the appropriate size and type of the product(s) have been used for the installation having regard to the intended use of the technical building system.

## **Amendments 107 and 119**

### **Proposal for a directive Article 8 – paragraph 2 a (new)**

*Text proposed by the Commission*

*Amendment*

***2a. In accordance with Annex I of Directive 2009/.../EC of the European Parliament and of the Council [concerning common rules for the internal market in electricity]. Member States shall ensure that smart meters are installed in all new buildings and all buildings undergoing a major renovation and whenever a meter is replaced, and shall encourage the installation of active control systems such as automation, control and monitoring systems, where appropriate.***

## **Amendments 60 and 102**

### **Proposal for a directive Article 9**

*Text proposed by the Commission*

*Amendment*

***Buildings of which both carbon dioxide emissions and primary energy consumption are low or equal to zero***

***Net zero energy buildings***

1. Member States shall draw up national plans for increasing the number of buildings *of which both carbon dioxide emissions and primary energy consumption are low or equal to zero.*

*They* shall set targets for the minimum percentage *which those buildings in 2020 shall constitute* of the total number of buildings and *represent* in relation to the total useful floor area.

Separate targets shall be set for:

- (a) new and refurbished residential buildings;
- (b) new and refurbished non-residential buildings;
- (c) buildings occupied by public authorities.

Member States shall set *the* targets referred to in point (c) taking into account the leading role which public authorities should play in the field of energy performance of buildings.

2. The national plan referred to in paragraph 1 shall include inter alia the following elements:

*(a) the Member State's definition of buildings of which both carbon dioxide emissions and primary energy consumption are low or equal to zero;*

(b) intermediate targets expressed as a percentage which those buildings shall constitute of the total number of buildings and represent in relation to the total useful floor area in 2015;

1. Member States shall draw up national plans for increasing the number of *net zero energy* buildings *as defined in Article 2(1c).*

*Members States shall ensure that all new buildings are at least net zero energy buildings by 31 December 2016 at the latest-*

*Member States* shall set targets for the minimum percentage *of buildings which shall be, by 2015 and by 2020 respectively, net zero energy buildings, measured as a percentage* of the total number of buildings and *as a percentage* in relation to the total useful floor area.

Separate targets shall be set for:

- (a) new and refurbished residential buildings;
- (b) new and refurbished non-residential buildings;
- (c) buildings occupied by public authorities.

Member States shall set *separate* targets *for both new and existing buildings* referred in point (c) *which are at least three years before the respective targets set in this Article* taking into account the leading role which public authorities should play in the field of energy performance of buildings.

2. The national plan referred to in paragraph 1 shall *be drawn up after consulting all relevant stakeholders, including local and regional authorities, and* include inter alia the following elements:

(b) intermediate targets expressed as a percentage which those buildings shall constitute of the total number of buildings and represent in relation to the total useful floor area in 2015 *and 2020;*

(c) information on the measures undertaken for the promotion of those buildings.

3. Member States shall communicate the national plans referred to in paragraph 1 to the Commission by 30 June 2011 at the latest and report to the Commission every three years on the progress in implementing their national plans. The national plans and progress reports *may* be included in the Energy Efficiency Action Plans referred to in Article 14(2) of Directive 2006/32/EC.

4. The Commission shall establish common *principles for defining* buildings of which both carbon dioxide emissions and primary energy consumption are low or equal to zero.

*(ba) details of the national requirements concerning minimum levels of energy from renewable sources in new buildings and existing buildings undergoing major renovation, as required under Directive 2009/.../EC on the promotion of the use of energy from renewable sources and Articles 6 and 7 of this Directive;*

(c) *a summary of all policies and* information on the measures undertaken for the promotion of those buildings;

*(ca) national, regional or local programmes to support measures for the promotion of these buildings such as fiscal incentives, financial instruments or reduced VAT.*

3. Member States shall communicate the national plans referred to in paragraph 1 to the Commission by 30 June 2011 at the latest and report to the Commission every three years on the progress in implementing their national plans. The national plans and progress reports *shall* be included in the Energy Efficiency Action Plans referred to in Article 14(2) of Directive 2006/32/EC.

*3a. Within two months of the communication of a national plan by a Member State referred to in paragraph 3, the Commission, taking full account of the subsidiary principle, may reject that plan, or any aspect thereof, on the basis that it does not respect all of the requirements of this Article. In this case, the Member State concerned shall propose amendments. Within one month of receiving these proposals, the Commission shall accept the amended plan or request further specific amendments. The Commission and the Member State concerned shall take all reasonable steps to reach an agreement on the national plan within five months of the date of the initial communication.*

4. The Commission shall, *in accordance with the definition set out in Article 2,* establish a *detailed* common *definition of net zero energy* buildings by 31 December 2010 at the latest.

Those measures designed to amend non-essential elements of this Directive by supplementing it shall be adopted in accordance with the procedure referred to in Article 21(2).

5. The Commission shall publish a report on the progress of Member States in increasing the number of buildings *of which both carbon dioxide emissions and primary energy consumption are low or equal to zero*. On the basis of this report the Commission shall develop *a strategy*, and, if necessary, propose measures to increase the number of those buildings.

Those measures designed to amend non-essential elements of this Directive by supplementing it shall be adopted in accordance with the procedure referred to in Article 21(2).

5. The Commission shall *by 30 June 2012 and every three years thereafter* publish a report on the progress of Member States in increasing the number of *net zero energy* buildings. On the basis of this report the Commission shall develop *an action plan*, and, if necessary, propose measures to increase the number of those buildings.

## **Amendments 95, 110 and 120**

### **Proposal for a directive Article 9 a (new)**

*Text proposed by the Commission*

*Amendment*

#### ***Financial Incentives and Market Barriers***

***1. Member States shall, by 30 June 2011, draw up national action plans, including proposed measures, for meeting the requirements laid down in this Directive through reducing existing legal and market barriers and developing existing and new financial and fiscal instruments to increase the energy efficiency of new and existing buildings.***

***These proposed measures shall be sufficient, effective, transparent and non-discriminatory, shall support the execution of the recommendations included in the energy performance certificate, strive to encourage substantial improvements in the energy performance of buildings where an improvement would not otherwise be economically feasible and include measures to support households at risk of energy poverty.***

***Member States shall compare their financial and fiscal instruments with the instruments listed in Annex IIIb and, without prejudice to national***

*legislation, implement at least two measures from that Annex.*

*2. Member States shall communicate these national action plans to the Commission by including them in the Energy Efficiency Action Plans referred to in Article 14(2) of Directive 2006/32/EC and shall update them every three years.*

*3. The Commission shall, by 30 June 2010 at the latest, following an impact assessment, bring forward appropriate legislative proposals to strengthen existing and propose additional Community financial instruments to support the implementation of this Directive.*

*These proposals shall consider the following measures:*

*(a) in the context of the revision of the ERDF Regulation for the next programming period, a significant increase of the maximum amount of the European Regional Development Fund allocation that may be used to support energy efficiency including district heating and cooling and renewable energy investments in housing and an extension of the eligibility of those projects;*

*(b) the use of other Community funds to support research and development, information campaigns or training related to energy efficiency;*

*(c) the establishment of an Energy Efficiency Fund, based on contributions from the Community budget, the European Investment Bank and Member States to act as a leverage for increasing private and public investments for projects increasing energy efficiency of buildings, including renewable energy in buildings or building components, related to energy efficiency by 2020. This Energy Efficiency Fund shall be integrated into the programming of other Community structural assistance. The criteria for its allocation shall be defined according to Council*

**Regulation (EC) No 1083/2006 and it shall be implemented by 2014, at the latest;**

**(d) reduced VAT for services and products, including renewable energy in buildings or building components, related to energy efficiency.**

## **Amendments 122, 103 and 62**

### **Proposal for a directive**

#### **Article 10**

##### *Text proposed by the Commission*

1. Member States shall lay down the necessary measures to establish a system of certification of the energy performance of buildings. The energy performance certificate shall include the energy performance of a building and reference values such as minimum energy performance requirements in order to make it possible for owners or tenants of the building or parts thereof to **compare and** assess its energy performance.

2. The certificate shall include recommendations for the **cost-effective** improvement of the energy performance of a building or parts thereof.

The recommendations included in the energy performance certificate shall cover:

(a) measures carried out in connection with a major renovation of the building envelope or technical building system(s); and

(b) measures for individual parts or elements of a building independent of a

##### *Amendment*

1. Member States shall lay down the necessary measures to establish a system of certification of the energy performance of buildings. The energy performance certificate shall include the energy performance of a building and reference values such as minimum energy performance requirements in order to make it possible for owners or tenants of the building or parts thereof to assess its energy performance **and to compare it easily with other residential or non-residential buildings. It may for non-residential buildings, if appropriate, also include the actual annual energy that is consumed, as referred to in Annex I.**

**When a building is sold or let in advance of construction, the seller shall provide an accurate written assessment of its future energy performance.**

2. The certificate shall include recommendations for the **cost-optimal** improvement of the energy performance of a building or parts thereof.

The recommendations included in the energy performance certificate shall cover:

a) measures carried out in connection with a major renovation of the building envelope, **including its insulation systems**, or technical building system(s);

b) measures for individual parts or elements of a building independent of a

major renovation of the building envelope or technical building system(s).

3. The recommendations included in the energy performance certificate shall be technically feasible for the specific building and shall provide transparent information as to their cost-effectiveness. The evaluation of cost-effectiveness shall be based on a set of standard conditions, ***such as on*** the assessment of energy savings and underlying energy prices and interest rates for investments necessary to implement the recommendations.

4. The energy performance certificate shall provide an indication as to where the owner or tenant can receive more detailed information regarding the recommendations given in the certificate. In addition, it shall contain information on the steps to be taken to implement the recommendations.

5. Certification for apartments or units designed for separate use in building

major renovation of the building envelope, ***including its insulation systems***, or technical building system(s).

3. The recommendations included in the energy performance certificate shall be technically feasible for the specific building and shall provide transparent information, ***including as a minimum a clear indication of the calculated energy saving potential of the measure, the net present value and investment costs for the specific building or building type***. The evaluation of ***the costs*** shall be based on a set of standard conditions, ***which shall include as a minimum*** the assessment of energy savings and underlying energy prices, ***financial or fiscal incentives*** and interest rates for investments necessary to implement the recommendations.

***3a. Member States shall ensure that public authorities and other institutions which provide financing for the purchase or renovation of buildings take the indicated energy performance and the recommendations from energy performance certificates into account in determining the level and conditions of financial incentives, fiscal measures and loans.***

4. The energy performance certificate shall provide an indication as to where the owner or tenant can receive more detailed information regarding the recommendations given in the certificate. In addition, it shall contain information on the steps to be taken to implement the recommendations, ***including information on available fiscal and financial incentives and financing possibilities***.

***4a. Public authorities, taking into account the leading role which they should play in the field of energy performance of buildings, shall implement the recommendations included in the energy performance certificate issued for buildings occupied by them within its validity period.***

5. Certification for apartments or units designed for separate use in building

blocks may be based:

(a) on a common certification of the whole building for blocks with a common heating system or

(b) on the assessment of *another representative apartment in the same building block*.

6. Certification for single-family houses may be based on the assessment of another representative building of similar design and size with a similar actual energy performance quality if this correspondence can be guaranteed by the expert issuing the energy performance certificate.

7. The validity of the energy performance certificate shall not exceed 10 years.

blocks may be based:

(a) on a common certification of the whole building for blocks with a common heating system or

(b) on the assessment of *the energy performance of that apartment or unit*.

6. Certification for single-family houses may be based on the assessment of another representative building of similar design and size with a similar actual energy performance quality if this correspondence can be guaranteed by the expert issuing the energy performance certificate.

7. The validity of the energy performance certificate shall not exceed 10 years.

*7a. The Commission shall adopt, by 30 June 2010, guidelines specifying minimum standards for the content, language and presentation of energy performance certificates.*

*That measure, designed to amend non-essential elements of this Directive by supplementing it, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 21(2).*

*7b. Each Member State shall recognise certificates issued in another Member State in accordance with these guidelines and shall not restrict the freedom to provide financial services for reasons relating to the certificate issued in that Member State.*

## **Amendment 94**

### **Proposal for a directive Article 10 – paragraph 7 b (new)**

*Text proposed by the Commission*

*Amendment*

*7b. By 2011, on the basis of information received from Member States and in consultation with the relevant sectors, a voluntary common European Union*

*certification for the energy performance of non-residential buildings shall be developed through the Committee procedure referred to in Article 21. By 2012, Member States shall introduce the European Union voluntary certification system referred to in paragraph 1 in their countries to function alongside the national certification scheme.*

## **Amendment 63**

### **Proposal for a directive Article 11 – paragraph 1**

*Text proposed by the Commission*

1. Member States shall ensure that an energy performance certificate is issued for buildings or parts thereof which are constructed, sold or rented out and for buildings *where* a total useful floor area over 250 m<sup>2</sup> *is* occupied by a public authority.

*Amendment*

1. Member States shall ensure that an energy performance certificate is issued for buildings or parts thereof which are constructed, sold or rented out, and for buildings *frequently visited by the public with* a total useful floor area over 250 m<sup>2</sup> *and for buildings* occupied by a public authority.

## **Amendment 64**

### **Proposal for a directive Article 11 – paragraph 4 a (new)**

*Text proposed by the Commission*

*Amendment*

*4a. A building owner may at any time request an accredited expert to produce, re-calculate and update an energy performance certificate, irrespective of whether the building is being constructed, refurbished, rented out or sold.*

## **Amendment 65**

### **Proposal for a directive Article 12**

*Text proposed by the Commission*

1. Member States shall take measures to

*Amendment*

Member States shall take measures to

ensure that where *a total useful floor area over 250 m<sup>2</sup>* of a building is occupied by public authorities, the energy performance certificate is displayed in a prominent place clearly visible to the public.

**2. Member States shall take measures to ensure that where a total useful floor area over 250 m<sup>2</sup> of a building for which an energy performance certificate has been issued in accordance with Article 11(1) is frequently visited by the public, the energy performance certificate is displayed in a prominent place clearly visible to the public.**

#### Amendment 66

##### Proposal for a directive Article 13 – paragraph 1

*Text proposed by the Commission*

1. Member States shall lay down the necessary measures to establish a regular inspection of heating systems with boilers of an effective rated output of more than 20 kW. The inspection shall include an assessment of the boiler efficiency and the boiler sizing compared to the heating requirements of the building.

#### Amendment 67

##### Proposal for a directive Article 13 – paragraph 2

*Text proposed by the Commission*

2. The Member States may set different frequencies of inspections depending on the type and effective rated output *of the boiler* of the heating system. When setting the frequencies Member States shall take into account the costs of the inspection of

ensure that where a building is occupied by public authorities *or where a building with a total useful floor area over 250 m<sup>2</sup> is frequently visited by the public* the energy performance certificate is displayed in a prominent place clearly visible to the public.

*Amendment*

1. Member States shall lay down the necessary measures to establish a regular inspection of heating systems with boilers *fired by non-renewable liquid or solid fuel* of an effective rated output of more than 20 kW. The inspection shall include an assessment of the boiler efficiency and the boiler sizing compared to the heating requirements of the building. *Member States may suspend these inspections where an electronic monitoring and control system is in place.*

*Amendment*

2. The Member States may set different frequencies of inspections depending on the type and effective rated output of the heating system. When setting the frequencies Member States shall take into account the costs of the inspection of the

the heating system and the estimated energy cost savings that may result from the inspection.

heating system and the estimated energy cost savings that may result from the inspection.

## Amendment 68

### Proposal for a directive

#### Article 13 – paragraph 4 – subparagraph 2 a (new)

*Text proposed by the Commission*

*Amendment*

***2a. Where the Commission considers that the report by the Member State referred to in the second subparagraph does not demonstrate the equivalence of a measure referred to in the first subparagraph, it may, within six months of receiving the report, request that the Member State either produce further evidence or implement specific additional measures. If, within one year of making this request, the Commission is not satisfied with the evidence provided or additional measures implemented, it may withdraw the derogation.***

## Amendments 108, 123 and 69

### Proposal for a directive

#### Article 14

*Text proposed by the Commission*

*Amendment*

1. Member States shall lay down the necessary measures to establish a regular inspection of air-conditioning systems ***of*** an effective rated output of more than ***12 kW***. The inspection shall include an assessment of the air-conditioning efficiency and the sizing compared to the cooling requirements of the building.

1. Member States shall lay down the necessary measures to establish a regular inspection of air-conditioning ***and ventilation*** systems, ***and reversible heat pumps with*** an effective rated output of more than ***5 kW***. The inspection shall include an assessment of the air-conditioning efficiency and the sizing compared to the cooling requirements of the building. ***The inspection of ventilation systems shall also include an assessment of the airflows.***

***Member States may suspend these inspections where an electronic monitoring and control system is in place allowing for remote monitoring of***

2. The Member States may set different frequencies of inspections depending on the type and effective rated output of the air-conditioning system. When setting the frequencies Member States shall take into account the costs of the inspection *of the air-conditioning system* and the estimated energy cost savings that may result from the inspection.

*the efficiency and safety of the systems.*

2. The Member States may set different frequencies of inspections depending on the type and effective rated output of the air-conditioning system, *the ventilation system or reversible heat pumps*. When setting the frequencies Member States shall take into account the costs of the inspection and the estimated energy cost savings that may result from the inspection.

*2a. In laying down the measures referred to in paragraphs 1 and 2, Member States shall, as far as is economically and technically feasible, ensure that inspections are carried out in accordance with inspection of heating systems and other technical systems referred to in Article 13 of this Directive and inspection of leakages as laid down in Regulation CE842/2006.*

*2b. By derogation from paragraphs 1 and 2 Member States may decide to take measures to ensure the provision of advice to users on the replacement of air conditioning systems or on other modifications to the air conditioning system which may include inspections to assess the efficiency and appropriate size of the air conditioning system. The overall impact of this approach shall be equivalent to that arising from the provisions set out in paragraphs 1 and 2. Where Member States apply the measures referred to in the first subparagraph, they shall by 30 June 2011 at the latest, submit to the Commission a report on the equivalence of those measures to measures laid down in paragraphs 1 and 2. Member States shall submit these reports to the Commission every three years. The reports may be included in the Energy Efficiency Action Plans referred to in Article 14(2) of Directive 2006/32/EC.*

*Where the Commission considers that the report by the Member State referred to in the second subparagraph does not demonstrate the equivalence of a measure referred to in the first subparagraph, it may, within six months of receiving the*

*report, request that the Member State either produce further evidence or implement specific additional measures. If, within one year of making this request, the Commission is not satisfied with the evidence provided or additional measures implemented, it may withdraw the derogation.*

## **Amendment 70**

### **Proposal for a directive Article 16**

#### *Text proposed by the Commission*

Member States shall ensure that the energy performance certification of buildings, the inspection of heating systems and air-conditioning systems are carried out in an independent manner by qualified and accredited experts, whether operating as self-employed or employed by public bodies or private enterprises bodies.

Experts shall be accredited taking into account their competence and their independence.

#### *Amendment*

**1.** Member States shall ensure that the energy performance certification of buildings, the inspection of heating systems and air-conditioning systems are carried out in an independent manner by qualified and accredited experts, whether operating as self-employed or employed by public bodies or private enterprises bodies.

Experts shall be accredited taking into account their competence and their independence.

**2.** *Member States shall ensure mutual recognition of national qualification and accreditation.*

**3.** *By 2011 the Commission shall establish guidelines including recommendations for minimum standards for the regular training of experts.*

*That measure, designed to amend non-essential elements of this Directive by supplementing it, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 21(2).*

**4.** *Member States shall make available to the public information on training and accreditation. Member States shall also set up and make available a register of qualified and accredited experts.*

## **Amendment 71**

**Proposal for a directive**  
**Article 17 – paragraph 1**

*Text proposed by the Commission*

1. Member States shall ensure that an independent control system for energy performance certificates and reports on the inspection of heating and air conditioning systems is established in accordance with Annex II.

*Amendment*

1. Member States shall ensure that an independent control system for energy performance certificates and reports on the inspection of heating and air conditioning systems is established in accordance with Annex II. ***Member States shall establish split enforcement mechanisms for organisations which have responsibility for the enforcement of energy performance certificates and reports on the inspection of heating and air conditioning systems.***

**Amendment 72**

**Proposal for a directive**  
**Article 18 - introductory part**

*Text proposed by the Commission*

The Commission, assisted by the Committee established by Article 21, shall evaluate this Directive in the light of experience gained during its application, and, if necessary, make proposals with respect to, inter alia:

*Amendment*

The Commission, assisted by the Committee established by Article 21, shall evaluate this Directive ***and consider a revision by 2015***, in the light of experience gained ***and progress made*** during its application, and, if necessary, make proposals with respect to, inter alia:

**Amendment 73**

**Proposal for a directive**  
**Article 18 – point b a (new)**

*Text proposed by the Commission*

*Amendment*

***(ba) establishing a Community-wide requirement for existing buildings to be net zero energy buildings.***

## Amendment 74

### Proposal for a directive Article 19

#### *Text proposed by the Commission*

Member States shall take the necessary measures to inform the owners *or* tenants of buildings or parts thereof as to the different methods and practices that serve to enhance energy performance.

Member States shall in particular provide information to the owners *or* tenants of buildings on energy performance certificates and inspection reports, their purpose and objectives, on cost-effective ways to improve the energy performance of the building and on mid- and long-term financial consequences if no action is taken to improve the energy performance of the building.

#### *Amendment*

**1.** Member States shall take the necessary measures to inform the owners *and* tenants of buildings or parts thereof as to the different methods and practices that serve to enhance energy performance.

**2.** Member States shall in particular provide information to the owners *and* tenants of buildings on energy performance certificates and inspection reports, their purpose and objectives, on cost effective ways to improve the energy performance of the building and on mid- and long-term financial consequences if no action is taken *and on financial instruments available* to improve the energy performance of the building. *Information campaigns shall aim to encourage owners and tenants to meet at least the minimum requirements set out in Articles 4 and 9.*

**3.** *Member States shall ensure that local and regional authorities are involved in the development of programmes to provide information and training and to raise awareness.*

## Amendment 75

### Proposal for a directive Article 19 – paragraph 3 a (new)

#### *Text proposed by the Commission*

#### *Amendment*

**3a.** *Member States shall also ensure, with participation from local and regional authorities, that suitable guidance and training is made available for those responsible for implementing this Directive through planning and enforcement of building standards. In particular such guidance and training shall reinforce the importance of improving energy performance and shall enable consideration of the optimal combination of improvements in energy*

*efficiency, use of renewable energy and use of district heating and cooling when planning, designing, building and renovating industrial or residential areas.*

**Amendment 76**

**Proposal for a directive  
Article 19 – paragraph 3 b (new)**

*Text proposed by the Commission*

*Amendment*

***3b. Owners and tenants of commercial buildings shall be obliged to exchange information regarding actual energy consumption.***

**Amendment 77**

**Proposal for a directive  
Article 19 – paragraph 3 c (new)**

*Text proposed by the Commission*

*Amendment*

***3c. Member States shall provide information to the Commission regarding:***  
***(a) support schemes at national, regional and local level for the promotion of energy efficiency and the use of energy from renewable sources in buildings ;***  
***(b) the share of energy from renewable sources used in the buildings sector at national and regional level, including specific information about whether the renewable energy comes from on-site devices, district heating and cooling or cogeneration;***  
***This information shall be included in the Energy Efficiency Action Plans referred to in Article 14(2) of Directive 2006/32/EC.***

## **Amendment 78**

### **Proposal for a directive Article 19 – paragraph 3 d (new)**

*Text proposed by the Commission*

*Amendment*

***3d. Member States shall take the necessary measures to train more installers and to ensure training to a higher level of competence for the installation and integration of the energy efficient and renewable technology required, so as to enable them to play the key role they have to support the improvement of building energy efficiency.***

## **Amendment 79**

### **Proposal for a directive Article 19 – paragraph 3 e (new)**

*Text proposed by the Commission*

*Amendment*

***3e. By 2010, the Commission shall establish a website, which shall contain the following information:***

***(a) the latest version of every Energy Efficiency Action Plan referred to in Article 14(2) of Directive 2006/32/EC;***

***(b) details of measures currently in place at Community level to improve the energy performance of buildings, including any applicable financial/fiscal instrument, appropriate application or contact details;***

***(c) details of national action plans and of national, regional and local measures currently in place in each Member State to improve the energy performance of buildings, including any applicable financial or fiscal instrument, any appropriate application or contact details;***

***(d) examples of best practice at national, regional and local level on improving the energy performance of buildings.***

***The information referred to in the first subparagraph shall be in a form which is***

*easily accessed and understood by ordinary tenants, owners and businesses from all Member States, as well as by all local, regional and national authorities. It shall be in a form which will assist these individuals and organisations easily to assess the support available to them to improve the energy performance of buildings, and to compare support measures between Member States.*

## **Amendment 80**

### **Proposal for a directive Article 22**

#### *Text proposed by the Commission*

Member States shall lay down the rules on penalties applicable to infringements of the national provisions adopted pursuant to this Directive and shall take all measures necessary to ensure that they are implemented. The penalties provided for must be effective, proportionate and dissuasive. Member States shall communicate those provisions to the Commission by 31 December 2010 at the latest and shall notify it without delay of any subsequent amendment affecting them

#### *Amendment*

Member States shall lay down the rules on penalties applicable to infringements of the national provisions adopted pursuant to this Directive and shall take all measures necessary to ensure that they are implemented. The penalties provided for must be effective, proportionate and dissuasive. Member States shall communicate those provisions to the Commission by 31 December 2010 at the latest and shall notify it without delay of any subsequent amendment affecting them. ***Member States shall provide evidence for the effectiveness of the rules on penalties in the Energy Efficiency Action Plans referred to in Article 14(2) of Directive 2006/32/EC***

## **Amendment 81**

### **Proposal for a directive Annex I – point 1**

#### *Text proposed by the Commission*

1. The energy performance of a building shall be determined on the basis of the calculated or actual annual energy that is consumed in order to meet the different needs associated with its ***typical*** use and shall reflect the heating energy needs and

#### *Amendment*

1. The energy performance of a building shall be determined on the basis of the calculated or actual annual ***primary*** energy that is consumed in order to meet the different needs associated with its ***customary*** use and shall reflect the heating

cooling energy needs (energy needed to avoid over-heating) to maintain the envisaged temperature conditions of the building.

energy needs and cooling energy needs (energy needed to avoid over-heating) to maintain the envisaged temperature conditions of the building. ***Consumption shall be balanced where applicable against energy produced by energy from renewable sources on site.***

## **Amendment 82**

### **Proposal for a directive Annex I – point 2**

#### *Text proposed by the Commission*

2. The energy performance of a building shall be expressed in a transparent manner and shall also include a numeric indicator of ***carbon dioxide emissions and*** primary energy use.

The methodology of calculation of energy performance of buildings ***should take into account*** European standards.

#### *Amendment*

2. The energy performance of a building shall be expressed in a transparent manner and shall also include a numeric indicator of primary energy use, ***expressed in kWh/m<sup>2</sup> per year.***

The methodology of calculation of energy performance of buildings ***shall use*** European standards ***and relevant Community legislation, including Directive 2009/.../EC [on the promotion of the use of energy from renewable sources].***

## **Amendment 83**

### **Proposal for a directive Annex I – point 2 – subparagraph 1 a (new)**

#### *Text proposed by the Commission*

#### *Amendment*

***When assessing the energy performance of electricity use in a building, the conversion factor from final to primary energy shall take into consideration the annual weighted average of the appropriate electricity fuel mix.***

## **Amendment 84**

**Proposal for a directive**  
**Annex I – point 3 – point a – point ii**

*Text proposed by the Commission*

(ii) insulation;

*Amendment*

(ii) insulation; *as achieved by the lowest thermally conductive materials available;*

**Amendment 85**

**Proposal for a directive**  
**Annex I – point 3 - point c**

*Text proposed by the Commission*

(c) air-conditioning installations;

*Amendment*

(c) air-conditioning installations, *including cooling systems;*

**Amendment 86**

**Proposal for a directive**  
**Annex I – point 3 – point e**

*Text proposed by the Commission*

(e) built-in lighting *installation (mainly in the non-residential sector);*

*Amendment*

(e) built-in lighting *systems defined by a lighting design taking into account the appropriate lighting levels for the functions executed at room level, the presence of persons, the availability of the appropriate level of natural light, the flexible adoption of light levels which respect the differences of functions and whether the installation is for the residential or non-residential sector.*

**Amendment 87**

**Proposal for a directive**  
**Annex I – point 5 – point h a (new)**

*Text proposed by the Commission*

*Amendment*

*(ha) wholesale and logistics buildings;*

**Amendment 88**

**Proposal for a directive**  
**Annex II – point 1 – introductory part**

*Text proposed by the Commission*

1. The competent authorities or bodies to whom responsibilities for implementing the independent control system have been delegated by the competent authorities shall make a random selection of at least 0.5 % of all the energy performance certificates issued annually and subject these to verification. The verification shall be carried out at one of the three alternative levels indicated below and each verification level shall be carried out at least for a statistically significant proportion of the certificates selected:

*Amendment*

1. The competent authorities or bodies to whom responsibilities for implementing the independent control system have been delegated by the competent authorities shall make a random selection of at least 0.5 % of all the energy performance certificates issued annually ***by each expert*** and subject these to verification. ***If an independent expert issues only a few certificates, the competent authorities or bodies shall make a random selection of at least one certificate and subject it to verification.*** The verification shall be carried out at one of the three alternative levels indicated below and each verification level shall be carried out at least for a statistically significant proportion of the certificates selected:

**Amendment 89**

**Proposal for a directive**  
**Annex II – point 1 a (new)**

*Text proposed by the Commission*

*Amendment*

***1a. If the checks demonstrate non compliance, the competent authorities or bodies shall make a random selection of an additional five certificates issued by the same expert and subject these to verification. Competent authorities or bodies shall impose penalties on the expert if the additional checks show non-compliance; the most serious infringements may be punished with the withdrawal of the expert's accreditation.***

**Amendment 90**

**Proposal for a directive**  
**Annex II – point 2 – introductory part**

*Text proposed by the Commission*

2. The competent authorities or bodies to whom responsibilities for implementing the independent control system have been delegated by the competent authorities shall make a random selection of at least 0.1 % of all the inspection reports issued annually and subject these to verification. The verification shall be carried out at one of the three alternative levels indicated below and each verification level shall be carried out at least for a statistically significant proportion of the inspection reports selected:

*Amendment*

2. The competent authorities or bodies to whom responsibilities for implementing the independent control system have been delegated by the competent authorities shall make a random selection of at least 0.1 % of all the inspection reports issued annually ***by each expert*** and subject these to verification. ***If an independent expert issues only a few inspection reports, the competent authorities or bodies shall make a random selection of at least one inspection report and subject it to verification.*** The verification shall be carried out at one of the three alternative levels indicated below and each verification level shall be carried out at least for a statistically significant proportion of the inspection reports selected:

**Amendment 91**

**Proposal for a directive**  
**Annex II – point 2 a (new)**

*Text proposed by the Commission*

*Amendment*

***2a. If the checks demonstrate non compliance, the competent authorities or bodies shall make a random selection of an additional five inspection reports issued by the same expert and subject these to verification. Competent authorities or bodies shall impose penalties on the expert if the additional checks show non-compliance; the most serious infringements may be punished with the withdrawal of the expert's accreditation***

**Amendments 104, 109 and 124**

**Proposal for a directive**  
**Annex III a (new)**

***Annex IIIa***

***Principles for a common methodology for calculating cost-optimal levels***

***In setting a common methodology for calculating cost-optimal levels, the Commission shall take into consideration at least the following principles:***

- define reference buildings that are characterised by and representative of their functionality and geographic location, including indoor and outdoor climate conditions. The reference buildings shall cover residential and non-residential buildings, both new and existing;***
- define technical packages (for example, insulation of the building's envelope or parts thereof, or more energy efficient technical building systems) of energy efficiency and energy supply measures to be assessed;***
- define complete technical packages designed to obtain net zero energy buildings;***
- assess heating and cooling energy demand, delivered energy, renewable energy produced on site, used primary energy and CO<sub>2</sub> emissions of the reference buildings (including the defined technical packages applied);***
- assess the corresponding energy-related investment costs, energy costs and other running costs of the technical packages applied to the reference buildings from the societal perspective as well as from the perspective of the property owner or investor;***
- regional/local labour related costs, including materials;***

***By calculating the life-cycle costs of a building on the basis of technical packages of measures applied to a reference building and setting them in relation to the energy performance and CO<sub>2</sub> emissions, the cost-efficiency of***

*different levels of minimum energy performance requirements shall be assessed.*

**Amendment 93**

**Proposal for a directive  
Annex III b (new)**

*Text proposed by the Commission*

*Amendment*

***Annex III b***

***Financial instruments for improving the energy performance of buildings***  
***Without prejudice to national legislation, Member States shall implement at least two financial instruments from the following list:***

- (a) VAT reductions for energy saving, high energy performance and renewable energy goods and services;***
- (b) other tax reductions for energy saving goods and services or energy efficient buildings, including fiscal rebates on income or property taxes;***
- (c) direct subsidies;***
- (d) subsidised loan schemes or low interest loans;***
- (e) grant schemes;***
- (f) loan guarantee schemes;***
- (g) requirements on or agreements with energy suppliers to offer financial assistance to all categories of consumers;***